

IN THE CLAIMS:

1-44. (cancelled)

45. (previously presented) An implantable hearing device comprising: a vibrational assembly enclosed in a hermetic housing,

wherein said hermetic housing comprises a sealed end, wherein said sealed end comprises a wall; and

wherein said vibrational assembly is configured to vibrate said hermetic housing and wherein said vibrational assembly comprises:

a) at least one controllable vibrating element, wherein said controllable vibrating element comprises:

i) a plurality of piezoelectric elements arranged in a stack, wherein said piezoelectric elements are configured to alternately expand and contract when a voltage is applied to said piezoelectric elements; and

ii) a plurality of electrically conductive bonding layers which are located between said piezoelectric elements in said stack, wherein said electrically conductive bonding layers serve to connect said piezoelectric elements mechanically and electrically in said stack;

b) an inertial mass configured to vibrate in response to vibration of said controllable vibrating element;

c) a base ring,

d) a non-conductive insert and

e) an interface element,

wherein said base ring is attached to said wall of said hermetic housing, wherein said non-conductive insert is attached to said base ring, and wherein said interface element is attached to at least one of said electrically conductive bonding layers and said non-conductive insert.

46. (previously presented) The hearing device of Claim 45, wherein one or more grooves are formed in said wall, and wherein said grooves are configured to help said hermetic housing osseointegrate into bone.

47. (previously presented) The hearing device of claim 46, wherein said grooves penetrate to about half or less of the thickness of said wall.

48. (previously presented) The hearing device of claim 46, wherein said grooves have a width of about 0.05 to 0.2 mm.

49. (previously presented) The hearing device of claim 46, wherein said grooves have a depth of about 0.05 to 0.2 mm.

50. (previously presented) The hearing device of claim 46, wherein said grooves are radially disposed in said wall.

51. (previously presented) The hearing device of claim 46, wherein said grooves are spirally disposed in said wall.

52. (previously presented) The hearing device of claim 46, wherein said bone is the bone surrounding the otic capsule in a human.

53. (previously presented) The hearing device of claim 46, wherein said bone is located between the lateral and superior semicircular canals in a human.

54. (previously presented) The hearing device of Claim 45, wherein said hermetic housing is at least partially coated with a compliant material.

55. (previously presented) The hearing device of claim 54, wherein said compliant material comprises silicone.

56. (previously presented) The hearing device of claim 54, wherein said compliant material comprises a silicone derivative material.